JANUARY 1958

FIREMEN

FIFTY-SEVENTH YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

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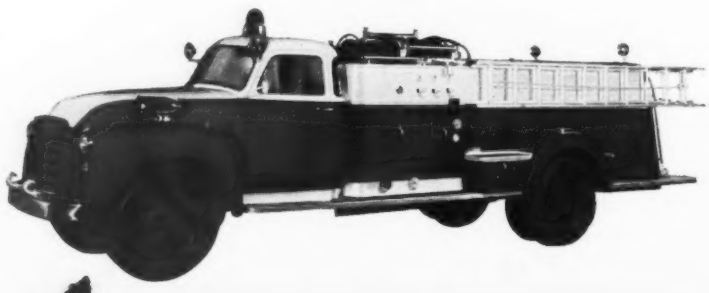

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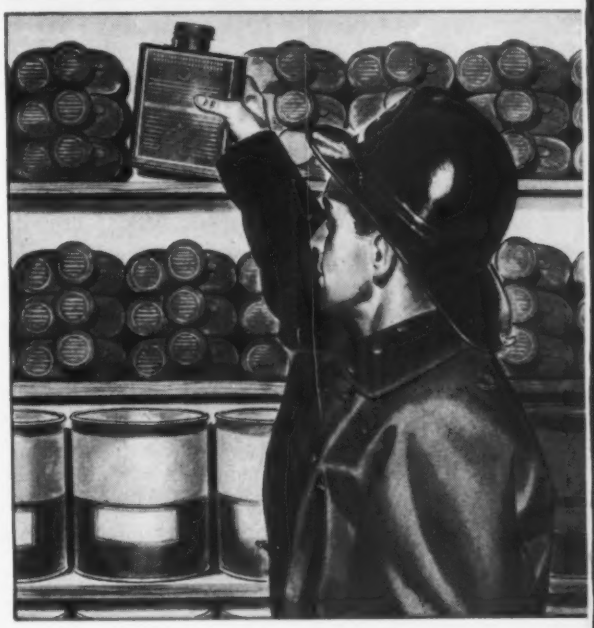

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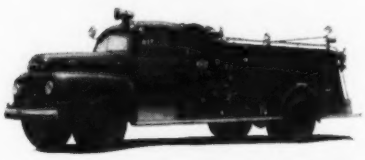

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Firemen

Volume 20 — Number 1

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New Law on Following Apparatus

The 1952 Massachusetts Legislature passed a bill sponsored by State Representative Howard S. Russell of Waltham (member of NFPA Committee on Farm Fire Protection) designed to keep roads clear leading to a fire. The new law identified as Chapter 172 of the Acts of 1952, is as follows:

Chapter 89 of the General Laws is hereby amended by striking out Section 7A, as appearing in the Tercentenary Edition, and inserting in place thereof the following:

Section 7A. Upon the approach of any fire apparatus which is going to a fire or responding to an alarm, every person driving a vehicle on a way shall immediately drive said vehicle as far as possible toward the right-hand curb or side of said way and shall keep the same at a standstill until such fire apparatus has passed. No person shall drive a vehicle over a hose of a fire department without the consent of a member of such department. No person shall drive a vehicle within three hundred feet of any fire apparatus going to a fire or responding to an alarm, nor drive said vehicle, or park or leave the same unattended, within eight hundred feet of a fire or within the fire lines established by the fire department, or upon or beside any traveled way, whether public or private, leading to the scene of a fire, in such a manner as to obstruct the approach to a fire of any fire apparatus or any ambulance, safety or police vehicle, or of any vehicle bearing an official fire or police department designation. Violation of any provision of this section shall be punished by a fine of not more than one hundred dollars.

Motor Fire Apparatus

Since the publication in the November, 1952, FIREMEN, page 30, of a letter by the editor, commenting on fire apparatus assemblies, correspondence from readers has indicated that we inadvertently gave the impression that apparatus having pumps and truck engines, both manufactured by the apparatus builder or assembler, might not be equal to apparatus having pumps and engines made by concerns specializing in component parts. Accordingly, we wish to make clear the position of the National Fire Protection Association with regard to motor fire apparatus.

1. We recommend that apparatus, regardless by whom it may be built or assembled, should meet the good practice standards and specifications of the NFPA and the International Association of Fire Chiefs, and adopted by the National Board of Fire Underwriters; or in Canada the comparable specifications issued by the Canadian Standards Association. These are performance standards based upon desired results such as pumping ability and road performance. They are competitive standards in that they do not specify type of engine (whether high or low speed type), or the number of cylinders, but state what the completed apparatus must do with an ample reserve of power.

2. We recommend that when buying pumping apparatus purchasers should consider buying apparatus of a design or type that has passed a 12-hour endurance test conducted by engineers of the National Board of Fire Underwriters.

3. We suggest that purchasers give due consideration to various concerns making proposals to build or assemble fire apparatus to make certain that the builder selected has the experience required to making a properly engineered well-rounded piece of apparatus, and has the organization and facilities to provide the type of service that may be needed to get the most out of the apparatus.

The building of fire apparatus requires more than the assembling of a pump, engine, chassis, and truck body. It requires balanced engineering design and skilled craftsmanship incorporating the experience of a specialized industry.

The National Fire Protection Association, even if asked, will never tell you what make of apparatus or engine to buy. The manufacturers, if they desire, can point out the advantages of their particular products in their advertisements. We feel confident, however, that any apparatus meeting the latest NFPA-IAFC-NBFU Specifications for Motor Fire Apparatus (1952 edition) will give the American fire service the best in serviceable fire department apparatus and equipment.

PERCY BUGBEE, *General Manager*
National Fire Protection Association

Cover Picture

This month's cover (*Wide World Photo*) shows the conditions that fire fighters encountered in Rockland, Maine, on December 12, when fire destroyed ten buildings and damaged four others. High winds helped the flames to involve exposures. The fire occurred in the downtown business district and involved two hotels and many business establishments. Loss was estimated at $800,000.

New Law of Firemen's Pensions

By Leo T. Parker, Attorney at Law, Cincinnati, Ohio

PENSION plans and other phases of social security are among the most pressing now confronting the various states' legislatures. These plans must be worked out carefully with due regard to actuarial requirement or else they may fail because of inherent weaknesses. A review of outstanding decisions rendered by the higher courts during the recent past will enable readers to readily determine their rights and liabilities under state pension laws.

Not Contract

MODERN higher courts consistently hold that a pension is not a matter of contract or vested rights so far as concerns the right of the state legislature to change it by modifying or repealing the law. However, when the pension right once has accrued it becomes vested so far as relates to obligation of the custodians of the fund to pay.

For instance, in Rockenfield *v.* Kuhl, 46 N. W. (2d) 17, the testimony showed facts as follows:

A state law provides that the rights of firemen to pensions shall not be lost or forfeited by discharge or for any other reason except conviction for a felony.

The court was asked to decide this question: *If a former fireman already is receiving a pension, can the state or city stop payment of the pension for ordinary reasons?*

According to a late higher court decision the answer is "No." In this case the court said:

"There is no affirmative provision for terminating a disabled fireman-pensioner's right to his pension, once established, except by a finding by proper procedure that his disability has terminated. We have held that while a pension is not a matter of contract or vested right so far as concerns the right of the lawmaking power to change it by modifying or repealing the law, nevertheless when the right once has accrued it becomes vested "so far as relates to the obligations of the custodians of the fund to pay."

Need Not Be Severe

ACCORDING to a late higher court decision, if a city fireman is injured in the performance of his duties as a fireman and disability, physical or mental, results he is entitled to receive pension benefits provided for by state statute. In other words, in order to entitle a city fireman to a pension the disability is not required to be of such severity as to render him unable to pursue any gainful occupation. If total disability is claimed the fireman must prove that he is unable to perform the duties of a fireman. If he proves these facts he is entitled to a pension, based on total disability.

For example, in Firemen's Relief & Retirement Fund *v.* Marks, 237 S. W. (2d) 420, the testimony showed facts as follows:

One Marks became a fully paid fireman in the employ of a city on June 1, 1939, and continued in such employment until November 13, 1944, during which time his average monthly wage was $177.00 per month. On October 16, 1940, Marks was accepted as a member of the pension fund and thereafter was entitled to participate therein under the terms of a state law.

On December 28, 1944, Marks applied for a pension and claimed total disability. He proved that while dragging a hose to a fire, he stumbled over a pile of concrete that was covered with vines, and injured his left knee. This injury was treated by Dr. Petway, who tapped the knee, drew off an accumulation of water, and diagnosed the injury as traumatic arthritis. The knee grew worse until Marks was retired from the service. His claim for a pension was denied and refused particularly because the testimony showed that his injury was not severe and furthermore he was earning more in his present employment than he earned as a fireman.

Notwithstanding this testimony the higher court held that Marks was entitled to receive a pension based on total disability. This court said:

"We think the meaning of Sec. 7, (state law), is that if a person is injured in the performance of his duty as a fireman and disability results from, or because of such injury, that such person becomes entitled to receive the pension benefits therein provided for. However, we do not believe that the disability must be of such severity as to render the person unable to pursue any gainful occupation, but if total disability is claimed it must be such as to render the person unable to perform the duties of a fireman. The evidence is undisputed that appellee (Marks) is now totally disabled from performing the duties of a fireman by reason of hypertrophic arthritis, and that he sustained injuries while performing the duties of a fireman."

After Injury

VERY frequently a fireman does not realize the extent of his injuries at the time of occurrence. This fact does not prevent the injured fireman from receiving a pension. Moreover, a court may decide whether or not an alleged injury while performing duties as a fireman caused ultimate disability or death.

For illustration, in Firemen's Relief and Pension Fund *v.* Jobe, 174 Pac (2d) 921, the testimony showed that a fireman named Jobe became ill while engaged in assisting in extinguishing a fire. He complained of a choking sensation in his throat and a pain in his chest and on the following day he called a physician, Dr. Vance, who treated him until his death.

Dr. Vance testified that Jobe apparently had a latent heart ailment of some kind which was brought to life due to his activities and exertion while engaged in fighting the fire and that as a consequence of such exertion he had a hemorrhage of some of the blood vessels which supply the heart with blood.

In view of this testimony the higher court awarded pension benefits to Jobe's dependents.

For comparison, see Kinney *v.* Sacramento City Employees' Retirement System, 176 Pac (2d) 775. This court held that if physical strain, overexertion, and stress undergone in work as fireman so aggravated and further injured a pre-existing heart affliction, such fireman is entitled to recover pension benefits.

Cannot Be Retired

CONSIDERABLE discussion has arisen from time to time over the legal question: *If a fireman is slightly disabled and on "light duties" can city officials retire him, against his will and wishes and put him on a pension?*

According to a late higher court decision the answer is "No," unless certain state laws clearly give the city officials this power and authority.

For example, in Breen *v.* Board of Trustees, 85 N. E. (2d) 161, the testimony showed facts as follows:

One Breen entered the fire department in 1920, and attained the rank of battalion chief. In 1945 he was injured in the discharge of his duties while fighting a fire. The injury was "smoke narcosis and respiratory congestion" and necessitated his removal to a hospital in a department ambulance. He remained in the hospital for six weeks and was on sick leave for several months.

He was then assigned to light duties upon the certificate of the medical board of the department, which recited that by reason of the injury sustained, he was partially permanently disabled and unfit for active duty in the uniformed force but was qualified to perform light duty sedentary in character. He served on light duty for several months when he was ordered to appear before the medical board for examination.

Then the fire commissioner wrote informing him that the medical board had reported that "you are disqualified, physically, for the performance of your duties in the Uniformed Force due to myocardial infarction and that this is a partial permanent disability which was caused in or induced by the performance of duty. The Medical Board also states that you are unfit for full fire duty."

Breen then was retired on an annual pension of three-fourths of his annual salary on the date of his retirement.

The higher court held that the Commissioner could not retire Breen against his will, because the state law clearly stated that Breen had (1) the right to be placed on light duty; or (2) the right to voluntary retirement at three-quarters pay after physical examination showing permanence of disability. This court said:

"The clear intent of paragraph 2 (state law) is to continue the partially permanently disabled fireman in the same position as a member of the department as he was in prior to his injury in the actual performance of duty with the right to continue such light duties, or within his own sole discretion."

Part of Salary

VERY frequently the legal question has been presented, as follows: "*When and under what circumstances can a promised pension lawfully not be paid to a retired fireman?*"

The answer is: If a percentage of a fireman's salary has been paid in over a period of several years and appropriated for pension purposes, the fireman has vested and positive rights to receive a pension. This is so notwithstanding state and city laws to the contrary.

The courts hold that city firemen are not fully compensated upon receiving salary payments, because, in addition, they have then earned certain pension benefits, the payment of which is to be made at a future date. While payment of these benefits is deferred, and is subject to the condition that the employee continue to serve for the period required by the statute, the mere fact that performance is in whole or in part dependent upon certain contingencies does not prevent a contract from arising, and the city may not deny or impair the contingent liability any more than it can refuse to make the salary payments which are immediately due. Hence, the city cannot do so after all the contingencies have happened, and further it cannot do so at any time after a contractual duty to make salary payments has arisen, since a part of the compensation which the fireman has at that time earned consists of his pension rights.

Other higher courts have held that if the law were not thus established a primary object of providing pensions for governmental employees, which is to induce competent persons to enter and remain in public employment, would be defeated. Other higher courts hold that a pension is no more nor less than a part of the salary of a disabled or retired fireman. Hence, pensions cannot be denied or refused especially if the fireman has paid into the pension fund a percentage of his salary.

For illustration, in Kern *v.* City of Long Beach, 179 Pac (2d) 799, it was shown that a man named Kern entered upon his duties as a member of a city fire department when the charter provided that after 20 years' aggregate service a member on application "shall be retired and paid in equal monthly installments" a pension equal to 50 per cent of his annual salary. Six years later a new law was enacted that two per cent of the employee's salary should be deducted and paid into a pension fund. Approximately 32 days before Kern completed the required 20 years' service, a new law was added which repealed the pension provisions and eliminated pensions of all persons not then eligible for retirement. Upon completion of his 20 years' service Kern requested that he be retired and paid a pension. The city rejected his application and Kern filed suit to compel payment. The testimony showed that two per cent of Kern's salary had been deducted for a pension fund over a period of almost 14 years.

It is contended by the city that Kern did not acquire any vested right to a pension because he did not complete the prescribed period of service prior to the time the pension provisions were repealed.

The higher court ordered the city to pay a pension to Kern, saying:

"Although there may be no right to tenure, public employment gives rise to certain obligations which are protected by the contract clause of the Constitution, including the right to the payment of salary which has been earned. Since a pension right is 'an integral portion of contemplated compensation' it cannot be destroyed, once it has vested, without impairing a contractual obligation. Accordingly, we conclude that petitioner (Kern) has a vested pension right and that the city, by completely repealing all pension provisions, has attempted to impair its contractual obligations. This it may not constitutionally do, and therefore the repeal is ineffective as to petitioner."

For comparison see Dryden *v.* Board of Pension Com'rs, 6 Cal. (2d) 575. This court said:

"It has been clearly held that the pension provisions of the city charter are an integral portion of the contemplated compensation set forth in the contract of employment between the city and a member of the department, and are an indispensable part of that contract, and that the right to a pension becomes a vested one upon acceptance of employment by an application."

In French *v.* French, 112 P. (2d) 235, 236, 134 A.L.R. 366, the court said:

"By the provisions of the city charter, under which that fund was created and maintained, the right to a pension was an integral part of the contract of employment and became a vested right at the time the employment began."

THUS it appears when all higher court cases are considered together, that a fireman may acquire a vested contractual right to a pension but that this right is not rigidly fixed by the specific terms of the legislation in effect during any particular period in which he serves. The statutory language is subject to the implied qualification that the governing body may make modifications and changes in the system. The fireman does not have a right to a fixed or definite benefit but only to a substantial or reasonable pension. There is no inconsistency therefore in holding that he has a vested right to a pension but that the amount, terms and conditions of the benefits may be altered. It is true that a fireman does not earn the right to a full pension until he has completed the prescribed period of service, but he has actually earned some pension rights as soon as he has performed substantial services for the city.

Therefore, the law is established that, under certain conditions pensions generally are not only vested rights of city firemen but also a contractual obligation of the city.

Must Promptly Complain

ACCORDING to a late higher court decision, a fireman who fails to register a complaint that his "vested rights" are unduly and unlawfully affected automatically forfeits and loses his "vested rights."

For illustration, in McNulty *v.* Blackburn, 42 So. (2d) 445, it was shown that in 1927 the state legislature passed a law creating a pension fund of $169.75 per month for members of the fire department, and providing that the retirement fund shall be derived from a tax levy of one-tenth of one mill on the taxable property in the city and one per cent of the monthly salary of firemen required to contribute to it. In 1941 a revised pension law repealed the Act of 1927 and the highest amount to be drawn by a retired fireman was $100.00 per month.

The testimony showed that a fire chief retired under the 1927 statute on a pension of $169.75 per month. In 1941 the revised pension law being adopted under which the highest amount allowed any pensioner was $100.00 per month, the fire chief accepted the benefits under the 1941 law for six and one-half years without complaint.

In subsequent litigation the higher court held that the ex-fire chief was not entitled to have the 1941 law declared void in so far as it affected his rights. The higher court said:

"When the legislature, as in this case, sets up a completely revised pension plan, involving a new set-up as to taxes and benefits, one in doubt as to his status under the new plan cannot accept benefits under it for a period of almost seven years and then challenge its validity."

Hence, delay of a pensioned fireman to promptly complain regarding the validity of a new pension law, which reduces his monthly pension, generally forfeits or cancels his normal legal rights.

Another reason the ex-fire chief had no vested right in and to the monthly retirement compensation provided by the 1927 law is that it provides that the retirement fund be derived from two sources, (1) a tax levy of one-tenth of one mill on the taxable property in the City and (2) one per cent of the monthly salary of those required by the act to contribute to it.

This is not so providing the retirement fund is composed of (1) contributions by the beneficiaries, and (2) appropriations by the city supported by its taxing power. In cases of this class, the courts have generally held that vested rights exist in the retirement fund so created. Such holdings are grounded on the theory that a contract exists between firemen entitled to participate and the governmental entity which is protected by the contract clause of the State and Federal Constitution.

Inconsistent Testimony

ACCORDING to a late higher court decision a disabled fireman cannot receive a pension award based on testimony contrary to his previous testimony. Hence, it is very important that a fireman who desires benefits under pension laws shall give consistent and not contradictory testimony.

For instance, in Tyra *v.* Board of Fire Pension, 225 Pac. (2d) 617, the testimony showed facts as follows: While engaged in the discharge of his duties as a fireman of a city one Tyra sustained severe bodily injuries. Considerable legal controversy developed over the question whether Tyra was entitled to a pension. During these legal hearings between the years 1942 and 1949 Tyra argued that he was not so disabled during a three-year period following his injury that he could be required to retire. Later he desired to be retired and recover a disability pension for that three-year period.

In subsequent litigation, the higher court held that Tyra could not reverse his original and former testimony and therefore refused to award a pension. This court said:

"The evidence of appellant's (Tyra's) pathetic condition, viewed most strongly in his favor is an eloquent plea for any relief that might be extended. But it is not that evidence that governs this decision. Appellant (Tyra) has heretofore contended with effect the very contradiction of his present arguments. He is in the anomalous position of requesting the court to reverse itself and to grant him a pension for the period prior to 1940 even though he contended at two former trials that he was not so disabled as to require retirement during the three-year period following his injury. On the basis of his inconsistent allegations alone in his several petitions and appeals the trial court was warranted in finding against his contentions."

1953 Fire Protection Yearbook

THE 1953 edition of the "Fire Protection Yearbook" has been published by Benn Brothers, Ltd., Bouverie House, 154 Fleet Street, London EC4, England. The Year Book contains information on all the public fire brigades in the British Commonwealth and Empire together with legal and technical data of particular interest to those concerned with fire safety. A diary section is also included. Copies may be obtained for 12/6d ($2.85) from the publisher at the above address.

Pumper Relay Studies - Rochester, N. Y.

Conducted by the Rochester Fire Department in cooperation with the
Fire Services Department of the National Fire Protection Association, October 27–28, 1952

THE purpose of these studies was to develop and test practical pumper relays using modern centrifugal fire department pumpers efficiently. For years, pumper relay practices were based upon formulas suitable for old low-pressure rotary pumps giving capacity at 120 psi. Present pressure-volume centrifugal pumps supply 70 percent or more of their rated capacity at 200 psi and flows below this are supplied in series (pressure) operation at motor speeds considerably below those required for parallel (volume) operation. Centrifugal pumps of 750 gpm rating and larger supply up to, and including, two 2½-in. lines in pressure operation.

Two Line Relay

TEST SERIES I. Supplying deluge gun with 1½-in. tip through two lines of 2½-in. hose, 1000 ft. from hydrant using two 750 gpm pumpers: No. 1 at hydrant and No. 2 at fire discharging to gun through three 50-ft. lengths of 2½-in. hose.

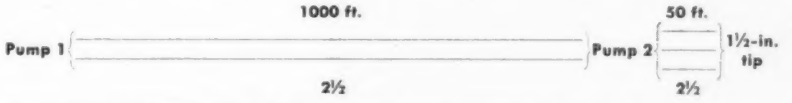
Pumpers had divided bodies. No. 1 laid two lines 500 ft. and returned to hydrant using 4½-in. soft suction to pump. No. 2 completed 1000 ft. lay and used two 2½-in. inlets to pump and three donut rolls to deluge gun.

To contrast performance, pumps were operated first in parallel (volume) and discharge at Pump 1 was at 150 psi. No significant advantage was taken of hydrant residual pressure because it was desired to develop practices that would serve equally well at draft and also because of the desire to get a comparison with pressure operations. Pump 2 operated to deliver maximum flow to gun. Hydrant static pressure was 47 psi throughout the series of tests.

Single Line, Pumps 1000 Ft. Apart

TEST SERIES II AND III. Discharge and RPMs about the same with two sizes of tip (1-in. and 1⅛-in.) because friction in long hose was chief cause of loss of pressure energy. However, best output of Pump 2 was with 1⅛-in. tip because lower nozzle pressures were required to utilize full available flow received from Pump 1, therefore pump pressures and RPM were lower. Example: With 1-in tip 275 psi discharge pressure and 1650 RPM was required at Pump 2 to utilize available 272 gpm (85 psi NP), while 270 gpm was supplied through 1⅛-in. tip with 220 psi pump pressure and 1490 RPM. This was especially important as Pump 2 had to pump through 1000 ft. of hose and supply NP.

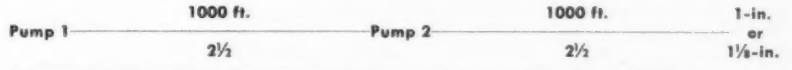
Table I. Two 1000-ft. Lines between Pumps — Three 50-ft. Lines to Gun



PUMP 1 (at Hydrant)				PUMP 2 (at Fire)				NOZZLE		
Inlet PSI	Disc. PSI	RPM	Pump Pos.	Inlet PSI	Disc. PSI	RPM	Pump Pos.	Tip	PSI	GPM
40	150	1450	Par.	0	60	1450	Par.	1⅛"	55	495
37	200	1600	Ser.	10	90	1390	Ser.	1⅛"	75	578
35	225	–	Ser.	–	100	1550	Ser.	1½"	84	661
39	200	1550	Ser.	40–	150–	900–	Ser.	Wornall		
				115	240	1600		fog*	–	*

*Change in fog pattern resulted in change in discharge and in gage readings on Pump 2.

Table II. Single Line Relay 2000 Ft. Pumpers 1000 Ft. Apart



PUMP 1 (at Hydrant)				PUMP 2 (at Fire)				NOZZLE		
Inlet PSI	Disc. PSI	RPM	Pump Pos.	Inlet PSI	Disc. PSI	RPM	Pump Pos.	Tip	PSI	GPM
45	150	1400	Par.	0	160	1790	Par.	1⅛"	44	248
45	200	1300	Ser.	0	220	1490	Ser.	1⅛"	52	270
45	150	1050	Ser.	0	200	1400	Ser.	Wornall 1"†	60	240
45	200	1300	Ser.	0	190	1350	Ser.	1"†	53	215
45	150	1050	Ser.	0	180	1300*	Ser.	1"†	60	240
45	150	1375	Par.	0	180	1900*	Par.	1"†	60	240

†Nozzle is adjustable as noted by different pumper gage readings.
*Note that series operation gave same gpm at 600 less RPM.

Table III. Relay 2000 Ft. Pumpers 1000 ft. Apart, 1-in. and 1⅛-in. Tips. (Same pump layout as in Table II)

PUMP 1 (at Hydrant)				PUMP 2 (at Fire)				NOZZLE		
Inlet PSI	Disc. PSI	RPM	Pump Pos.	Inlet PSI	Disc. PSI	RPM	Pump Pos.	Tip	PSI	GPM
47	150	1375	Ser.	0	180	1300	Ser.	1"	60	229
45	200	1700	Ser.	0	250	1600	Ser.	1"	81	266
45	225	1850	Ser.	0	275	1650	Ser.	1"	85	272
47	150	1375	Ser.	0	160	1200	Ser.	1⅛"	37	228
45	200	1725	Ser.	0	220	1490	Ser.	1⅛"	52	270
45	225	1850	Ser.	0	250	1600	Ser.	1⅛"	61	292

(Please turn to page 20)

Handling Common Contagious Diseases in an Emergency Ambulance

By William D. Claudy, M.D., Board of Police and Fire Surgeons, Washington, D. C.

Dr. Claudy's articles on Artificial Respiration, which appeared in the October, November and December, 1952, issue of FIREMEN, *evoked such favorable reader response that they have now been combined in a single reprint edition, available from the NFPA Executive Office. In this new series Dr. Claudy discusses what methods and precautions should be followed by rescue squad members who must handle persons infected with contagious diseases. Readers are invited to send questions and comments to the Editors of* FIREMEN, *NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts.*

Part I

AS MORE and more fire departments commence to operate ambulance services and, as these become integrated to form municipal or countywide networks providing emergency ambulance service to the greatest possible area, volunteer and professional fire departments, rescue squads, police ambulances, and the like are finding themselves confronted with the problem of handling contagious diseases.

As one fire department recently put it, "In our particular branch of public service, we have neither the time nor inclination to determine, on the spot, whether or not a case is a contagious disease." Therefore, these cases are, almost invariably, transported to the nearest hospital. The men of these ambulance services are aware of potential health hazards and the possibility of transmitting the disease to others who may later use the ambulance.

Though such risks exist, there is an inclination for lay rescue squads to over-emphasize them. This is due to a lack of knowledge of the diseases and conditions which they encounter. The very words "polio" or "spinal meningitis" strike terror to the uninstructed. Knowledge of these diseases will substitute intelligent respect for the fear which is so frequently felt. Therefore, to obtain this knowledge, we shall consider the common contagious diseases; their definitions, causes, and methods of transmission.

CONTAGIOUS diseases may be defined as those diseases which are caused by living, transmissible agents and may be spread or contracted by direct contact.

The stages of contagious disease are as follows: first, the *incubation period* which represents the time which elapses between the infection of the patient and the onset of symptoms. During this period, the infecting bacteria multiply to dangerous proportions and produce poisons which in turn unite with or attack the organs and tissues for which they have an affinity. The second stage is called the *prodromal stage*, or stage of invasion, and lasts from the onset of symptoms to the peak of the fever, or, in the eruptive diseases (the exanthemata), until the appearance of the characteristic eruption. The *fastigium* is the third stage which lasts from the stage of invasion to the time when the temperature begins to fall and the eruption to disappear. Fourth, a stage of *defervescence* is sometimes described following the fastigium and lasting until the temperature returns to normal. Fifth, follows the stage of *convalescence* which ends when the person has returned to normal health. With these general definitions in mind, let us study some of their basic principles and look into the methods by which contagion may be avoided.

THE common contagious diseases which ambulance teams may be called upon to transport include the following: 1. diphtheria, 2. scarlet fever, 3. measles (rubeola), 4. German measles (rubella), 5. whooping cough (pertussis), 6. mumps (acute parotitis), 7. chicken pox (varicella), 8. small pox, 9. meningicoccus meningitis (spinal meningitis), 10. acute anterior poliomyelitis (infantile paralysis).

There are other infectious diseases that may be spread by direct contact with specific infected material. They include: common colds, influenza, pneumonia, acute conjunctivitis, trachoma, gonorrhea, syphilis, favus, glanders, leprosy, puerperal sepsis, erysipelas, epidemic encephalitis, herpes zoster (shingles), and herpes simplex (cold sores), tuberculosis, and Vincent's angina (trench mouth).

In general, however, only the first listed are considered sufficiently contagious to be dangerous. Ordinary care and the resistance of healthy adults is usually enough to prevent the latter from being transmitted during short periods of ambulance contact.

Diphtheria

DIPHTHERIA may be defined as an acute, infectious disease caused by the bacillus diphtheriae and characterized, first, by the formation of an exudate on the membranes of the throat and breathing passages and, secondly, by constitutional symptoms caused by the absorption of toxins from the local lesion. The disease is found throughout the civilized world, especially in the temperate zone, and it is apt to show increases in frequency in most northern countries during the period from October to May. Other abnormal conditions such as chronic catarrh, diseased tonsils and adenoids, as well as the convalescent stage of measles and scarlet fever, may be important pre-disposing factors. Infection is usually due to direct contact with cases of the disease or with healthy carriers of virulent organisms. Milk-borne epidemics have been reported and animals have occasionally been shown to be carriers. Children between the ages of one and five are especially susceptible. Colored people are relatively immune. Many adults are immune without inoculation.

The incubation period of diphtheria is from one to seven days, but usually from two to four days. Con-

stitutional disturbances, such as fever and other subjective symptoms, usually do not appear until the local manifestations have become quite severe. Patients are able to transmit the disease to others during the twenty-four hours before the onset of symptoms until the diphtheria bacilli disappear from the secretion of the nose and throat or other sites of the disease. In most cases, this period is less than two weeks. This is determined by taking cultures from the nose and throat. Within three weeks of the onset, eighty per cent of cases will give negative cultures for diphtheria bacilli, while some of the remaining twenty per cent drag on for weeks as carriers of the organism and, therefore, as potential sources of danger. Healthy persons may also be found harboring these bacilli in their throats and noses and may be capable of giving the disease to others without contracting it themselves. Protection of ambulance personnel in known cases of diphtheria should consist of avoidance of possible droplet contamination and by wearing masks for those who must sit or work close to the patient for any length of time. In cases where there has been an unknowing exposure, immunity, or the lack of it, can be determined by the Schick test (a simple skin test). If the person is shown to be non-immune he can be made immune by injections of diphtheria antitoxin or toxoid.

Scarlet Fever

SCARLET fever may be defined as an acute, specific, infectious disease caused by a type of streptococcus and by a special toxin produced by this streptococcus, characterized by sudden onset of fever, vomiting, inflammation around the nose and throat, and followed by characteristic toxic manifestations, particularly an eruption which later peels; and with a tendency to secondary infections of the ears, the lymph glands of the neck, and of late infections of the kidney. The bacteria are quite resistant. Instances have been reported of toys, books, bed clothing, etc., having transmitted the disease. Serious milk-borne epidemics were formerly reported in great numbers, but with careful, modern pasteurization methods, this is seldom seen. The disease is not as contagious from direct contact as are measles and chicken pox. Domestic pets may transmit the disease occasionally and there are otherwise healthy human carriers of virulent scarlet fever, just as with diphtheria. A majority of cases, however, are due to direct contact with an active case or a human carrier. To a certain extent, this is a

(*Please turn to page 26*)

Glossary of Medical Terms Used in This Article

Note: Every profession has its vocabulary of special terms, which express a particular meaning, that might otherwise require many words. Those who deal with medical conditions should familiarize themselves with these terms. A fireman asked to define the term "Siamese" will take a number of words to explain a meaning which is perfectly clear to him. He will use this term in his everyday professional career without hesitation. Were he writing, he would expect his readers to either know or learn the word.

Though a full medical vocabulary is not necessary, knowledge of medical terms will help the student of ambulance and rescue squad technique to better master his subject. Hence, I have used them throughout the article, and append a glossary.

acute — coming on suddenly.
antitoxin — a substance which will neutralize a toxin or poison.
bacillus — one of three anatomical forms of bacteria.
carrier — one who carries dangerous bacteria in or on his person, without becoming ill from them, but who is able to infect others.
catarrh — chronic inflammation of the nose or air passages.
chronic — persistent.
conjunctivitis — inflammation of the conjunctiva (the membranes about the eye).
contagious — highly infectious.
convalescence — period of recovery.
culture — to grow (V), a growth of bacteria on a special medium (N).
defervesence — the period in which the temperature is returning to normal.
desquamation — peeling of the skin.
endemic — commonly present in certain areas.
epidemic — affecting many members of a community at the same time.
exudate — an outpouring of moisture or other liquid from pores or incisions.
fastigium — the peak of disease.
feces — (Adj: fecal) waste from the gastro-intestinal tract.
fomites — substances and materials, other than food, capable of transmitting disease organisms (linen, books, shoes, etc.).
gastro-intestinal — referring to the stomach and intestines.
host — (Biological) any animal or plant supporting or lodging a parasite.
immune — protected against a disease.
incubation period — the period between the infection of a patient and the onset of symptoms.
infectious — capable of being transmitted from person to person.
inoculate — to introduce (a disease) through the tissue (or any protecting serum).
isolation — shutting away of a patient and his accessories so that the disease will not be transmitted to others.
Koplik spots — an eruption seen on the inside of the cheeks, resembling a sprinkling of pepper, occurring during the prodromal stage of measles, and of help in early diagnosis (before the appearance of the typical rash).
meninges — the membranes surrounding and protecting the brain and spinal cord.
nasopharynx — the nose and throat area.
parotid gland — the large salivary gland situated on the cheek just in front of the ear, frequently affected in mumps.
prodromal period — period from the onset of symptoms to the peak of the disease.
quarantine — isolation of ill or suspected individuals, especially that which is compelled by law, and announced by placarding.
salivary glands — those glands about the mouth which secrete saliva.
sporadic — scattered, occurring occasionally.
toxin — a poison, usually from a particular bacteria.
toxoid — a specially treated toxin which can produce permanent protection against a disease.
virulent — highly poisonous.
virus — (filterable virus) an ultramicroscopic form of disease-producing agent which can pass through the pores of a porcelain filter.

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Industrial Fire Protection

Distillers Grain Fire

THE November, 1952, issue of FIREMEN contained an article on fire hazards accompanying the storage of brewers and distillers grains. L. A. Allen, Fire Protection Engineer, Cooperative G.L.F. Holding Corporation, Ithaca, New York, reports another incident.

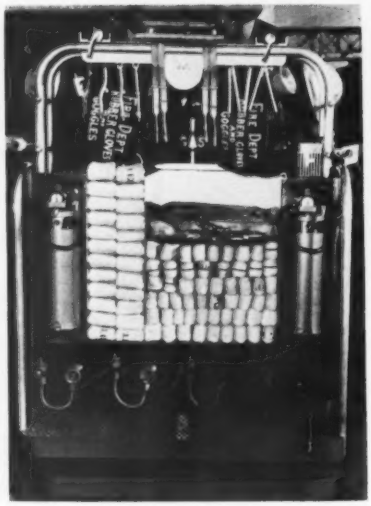
On November 1, the manager of a grain service store noticed that a bin containing 14 tons of distillers grain was on fire. A week previous the manager had noticed that this grain was heating and had attempted cooling the contents of the bin by reworking the grain several times. The unit had not been provided with a bin thermometer.

When the fire occurred the fire department was notified immediately and water was applied through a fog nozzle and booster line. About 4½ tons of the grain was salvaged. The rest was drawn out through the bottom of the bin and removed to a nearby field. An area of about 5 feet square on the inside of the bin was charred but no other apparent damage was done. However, the incident did verify the fact that spontaneous ignition in such grain can occur during cold weather months.

When heating is discovered in grains cautious overhauling is required to avoid flash fires or explosions. Separating the grains in smaller quantities, such as in bags, or spreading the material so that it may cool easily is a good practice. Fire fighting equipment should be kept available.

PLANT FIRE TRUCK

At the Chevrolet plant in Baltimore, Maryland, this plant fire truck is used for negotiating narrow aisles. It carries breathing apparatus, Ansul dry chemical fire equipment (located behind the driver's seat and over each front fender), hose and lighting equipment.



FIRE FIGHTING UNIT

Members of the Maintenance Department of the Edgewater, N. J., Works, Aluminum Corporation of America converted this fire truck from an electric industrial truck. (Left) The rear of the truck contains 1½- and 2½-in. hose, CO_2 cylinders, Pyrene extinguishers, lights, ladder, and auxiliary equipment. Top picture shows firemen's equipment, nozzles, applicator, and booster reel. The unit is manned by a 3-man crew.

Boiling Tar and Solvent

WHEN fire breaks out in a plant the actions of trained or untrained employees may determine whether production will continue with little interruption or a major fire loss result. This was illustrated in a chemical plant in Newton, North Carolina, where the simple act of closing a valve might have prevented a serious fire.

Employees were filling cans from a kettle which contained boiling tar and solvent. Fire started near the valve from which the mixture was flowing. Instead of closing the valve and sending an alarm employees tried to extinguish the flames with soda acid extinguishers. The burning mixture continued to flow over the floor and fire spread to an adjacent warehouse which contained barrels of alcohol and solvents.

Members of the responding fire department found a heavily involved building and could only concentrate on protecting exposures. Exploding barrels of alcohol and solvent made fire fighting hazardous but control was established through the use of foam and water fog.

Grain Elevator

IN Ware, Illinois, recently, lack of a damper in a cob duct was held to be the major contributing factor in the spread of fire which destroyed a grain elevator containing soy beans and corn. Fire started in a cob house 15 feet away from the elevator and 30 feet away from a brick incinerator. Sparks from the incinerator ignited the wood frame of the cob house and flames spread up the metal cob duct to a horizontal conveyor, then throughout the elevator before any first aid appliances could be used.

Fire apparatus responded from towns 7 miles distant but the elevator was fully involved when they arrived. Besides hand extinguishers the only available fire protection facilities on the property were a 2,500-gallon cistern and a 13,000-gallon water tank. An adjacent office building and warehouse were saved but the elevator and cob house were totally destroyed.

Booklet on Use of Radio in Industry

A NEW 8-page illustrated booklet, published by General Electric Company, discusses the use of two-way radio for better coordination of men, materials and machines.

The booklet, titled "Instant Communication," is slanted to those businesses using materials handling any emergency service equipments, and others who have plant protection problems. It outlines the use of two-way radio in numerous industries, and shows G-E equipment now available.

Copies are available free on request to Advertising Inquiry Section, General Electric Co., Electronics Park, Syracuse, N. Y.

Fires in the News

Wichita Falls, Texas, November 2. (*United Press Photo.*) An estimated fire loss of more than $250,000 resulted when fire destroyed three adjacent stores. A passerby first saw the fire and drove to a fire station to give the alarm. By the time fire fighters arrived all three stores were heavily involved and the roofs collapsed within a half-hour. Inadequate fire stops and large amount of wood frame construction helped the fire to spread rapidly.

Bellows Falls, Vermont, November 14. (*Wide World Photo.*) Delayed discovery and delayed alarm enabled fire to gain a good start in these 3- and 4-story buildings used for manufacturing and storing plastics. When Bellows Falls fire fighters arrived one building was involved in all floors above the first. Chief John E. Keefe immediately radioed for help from all fire departments within 22 miles in Vermont and New Hampshire. Tanks of LP gas and a 600-gallon fuel oil tank exploded and fire spread rapidly through connecting and adjacent buildings. Lack of sprinklers, open fire doors, many without fusible links, and inadequate fire walls aided fire spread. Loss was estimated in the vicinity of $445,000.

Union City, New Jersey, November 19. (*Photo by Warren C. Zapp.*) While fire fighters were battling an estimated $200,000 super market fire this aerial ladder was hastily lowered when a wall threatened to collapse. When the ladder which had been welded locally following an accident approached the horizontal it broke.

Westport, Massachusetts, November 14. (*United Press Photo.*) A fire that was confined to the kitchen and caused only $6,000 damage took the lives of a mother and 8 children in this home. Passing motorists discovered the fire and sent the alarm but could not gain entry to the house. Storm windows may have helped in trapping the heat which was so intense that refrigerator doors were twisted out of shape. All 9 victims died of suffocation.

(*At right*) **Nederland, Texas, November 29.** (*Associated Press Wirephoto.*) When an explosion occurred in a 200-foot high cracking unit used for separating gasoline from crude oil the flames caused by the blast were seen 25 miles away. Seven men were killed and three injured in the fire that followed. Ambulances and fire apparatus from Port Arthur, Beaumont, and other nearby cities responded to alarms. Initial estimates placed damage in the vicinity of $1,000,000.

Gas Mask Training in Miami, Florida

A VIGOROUS and continual training program of athletics and fire fighting practices is conducted by the Miami, Florida, Fire Department headed by Chief Henry R. Chase, past president of the IAFC and member of the NFPA Committee on Firemen's Training. (See March, 1949, and September, 1950, FIREMEN.)

Every fire fighter must play at least one game of volleyball each day, and other athletics are included in the training program to keep the members in the best of physical shape. The fire fighting training program is equally intense and members receive thorough instruction in the use of fog and wet water both of which have been used with great effectiveness by the Miami Fire Department. The 22 fire companies have a total of 471 men organized into 9 engine companies, 6 truck companies, 4 chemical companies, 2 hose companies and a rescue squad.

All fire fighters are thoroughly trained in the use of all-service gas masks and other breathing apparatus. The effectiveness of this training may be measured by the fact that since November, 1949, not a man has been "knocked out" by smoke or toxic gases during a fire.

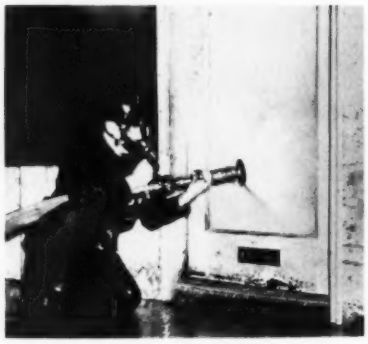
Most fire fighters in the Miami Fire Department carry their all-service masks in specially made pouches on the left breasts of the bunker coats. The canister is held in the pouch by means of retaining straps which are attached to the pouch and criss-cross over the canister to snap securely to the pouch front. The corrugated tube connecting mask and canister goes over the left shoulder and around the neck and the headband is held by a snap on the right shoulder. A Miami tent and awning company makes and installs the pouches on the bunker coats.

Chief Henry R. Chase, Miami Fire Department

In the initial attack on a smoky fire all men wear their masks. When the air clears they may remove them at their own discretion unless an officer orders otherwise. There are enough all-service masks to supply every man on duty in addition to a supply for off-shift fire fighters. Ninety percent of these masks are equipped with speaking diaphragm face pieces.

The Department is also equipped with MSA Demand Masks, one-hour oxygen breathing apparatus and Chemox Apparatus. A "Pneolator" is also available for the rescue squad.

Fire fighters not only use this breathing apparatus in training but also conduct a periodic examination and inspection program to assure that the masks are always ready for use in case of fire.



Miami fire fighters carry fog nozzles set for predetermined patterns. On the fire grounds operators only have to open controlling valves without bothering with adjustments.

Training in manual artificial respiration is also stressed since such techniques are necessary for saving victims of asphyxia until breathing and resuscitating apparatus are available. In this, as in every phase of fire fighting and rescue work, Chief Chase points out that the best techniques and equipment are only as good as their application.

Lieutenant M. E. Harrison instructs students on the care, use and functioning of gas masks at the Miami Fire College.

The Miami Fire Department has an extensive physical fitness program. Teams have won the city softball championship in 1950, city Class B basketball championship in 1951, and the state invitational championship in volleyball in 1952. Shown above are department members and their trophies. (*Left to right*) Lt. J. Wilkes, golf; J. E. McCollum, basketball; G. B. Seagroves, athletic director; Chief Henry Chase; Dan O'Connell, softball, and Don Hickman, volleyball.

A Miami student fireman being trained to handle hose while wearing a gas mask.

Twenty Die in Nursing Home Fire

TWENTY of the seventy aged and infirm male and female patients housed in the Cedar Grove Nursing Home, Hillsboro, Missouri, died in a fire which involved the building on October 31. A nurse passing by a linen room, attached to the first floor, saw a flash near a sparking electrical installation and the combustible fibreboard walls of the linen room ignited. She immediately sent an alarm and rescue operations were begun.

At his residence, Chief King of the Hillsboro Fire Department heard the siren sound at his fire station. As he ran to answer the alarm he found that the fire was at the Nursing Home which was across the street from his residence. He immediately ran into the Home and found very intense heat and smoke on the second floor. Nurses and other employees were conducting rescue activities so Chief King attacked the fire with available extinguishers. In the meantime apparatus from the Hillsboro Fire Department arrived and fire fighters began operating a booster line. When the booster tank was exhausted 1½-in. lines were used.

The DeSota, Festus, Crystal City and Goldman Fire Departments responded to a mutual aid call and operated from nearby hydrants and a pond 400 feet distant from the home. Fire fighters had difficulty in getting streams into the upper stories.

UNENCLOSED stairways and a combustible fibreboard ceiling helped to spread the fire rapidly, and heat became very intense in the 2½-story and basement concrete block building which had wood joist floors and roofs. There were also two 1-story annexes. Exit facilities from the top floor of the main building consisted of a 30-inch unenclosed interior stairway and a 30-inch exterior wood stairway which led from a converted dormer window to the roof of an annex. There was no stairway from the roof of this annex to the ground.

OF THE twenty patients who died from heat and suffocation, five men were found on the third floor level near one of the exits, the door of which was latched on the inside.

Investigation after the fire disclosed that electrical fixtures near the point of origin were attached to the combustible fibreboard walls without suitable outlet boxes and with wires extending through holes without bushings. (*Pictures by Photographer W. A. McDonnel of St. Louis, Missouri.*)

South side of the Home. Note how roof was burned completely.

Southeast side of building showing wooden stairways used as fire escapes. Practically all of the exit doors to the outside opened inward.

Front view of the Cedar Grove Nursing Home after the fire. This is the east side of the building. Fire began in a one-story frame linen room attached to the southeast corner of the Home, then spread horizontally and upward through unenclosed stairways.

New York City, N. Y. November 3. When fire started in this vacant warehouse 21 engine companies, 4 ladder companies, and 15 other units responded to alarms. Open floor areas and windows allowed the fire to spread upwards to the fifth floor and roof which collapsed before control was established. (*Associated Press Newsphoto.*)

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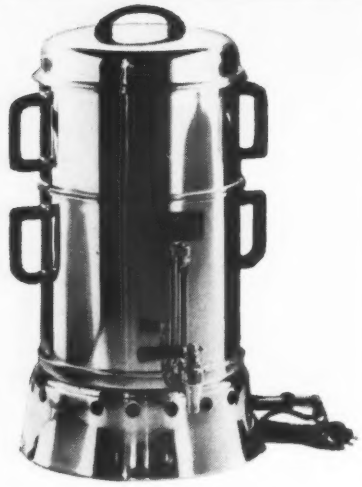

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Pumper Relay Studies—Rochester, N. Y.

(Continued from page 13)

Single Line, Pumps 1500 Ft. Apart

TEST SERIES IV. In this series somewhat less water was moved than with pumpers closer together. Pump 2 operated at low pressures and low engine speeds because the volume available and length of line to the nozzle did not permit higher discharge pressures although in each case except while operating the base pump at 150 psi while supplying a 1⅛-in. tip, an effective fire stream was developed. Pump 2 could readily have supplied the same volumes through 1000 rather than 500 ft. and could have provided higher nozzle pressures if the nozzles selected did not exceed the supply line capacity. The figures indicate that with 200 and 225 psi discharge pressures the supply pump can handle 1500 ft. of hose and the fire pump 1000 ft. with either a 1-in. or 1⅛-in. tip, or the equivalent in a fog nozzle.

Single Line, Pumps 2000 Ft. Apart

TEST SERIES V. With 2000 ft. between pumpers the supply engine delivered 200 gpm (10 psi loss per 100 ft.). The pump at the fire gave two 100 gpm streams but could have supplied four 1½-in. fog jets or a 1-in. tip at 45 psi. The pump at fire was operating at low pressure and could have supplied much longer lines if desired. This indicates that with 2000 ft. spacing (level ground) the performance was still very satisfactory with the supply pumper operating in series at 200 psi. and the advantage was gained of having one pump near the fire for control and distribution of streams and the other at water supply. While the discharge pressure of Pump 2 was low, additional pressure could have been utilized if fog streams of 100–150 psi pressure were used. Incidentally, while two 750 gpm pumpers were employed, this layout is well within the range of 500 gpm pumpers.

The RPMs shown are low because pumpers using low-speed engines happened to be employed. However, the RPM readings serve to indicate the relative amount of work done by each machine in each operation. Had Pump 1 been operating from draft rather than from a hydrant, the RPM readings would have been a little higher but the discharge pressures at Pump 1 would have been the same as there was no occasion in these tests to employ any additional pressure or volume supplied by the hydrant to boost the rated output of Pump 1.

Table IV. Single Line Relay 2000 Ft. Pumpers 1500 Ft. Apart. Lines 500 Ft. to Fire. Tips 1-in. and 1⅛-in. (Hydrant Static 47-48 psi.)

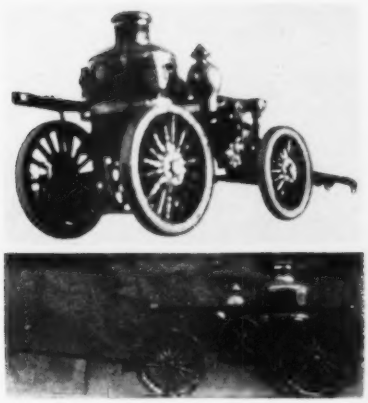
Pump 1 — 1500 ft. 2½ — Pump 2 — 500 ft. 2½ — 1-in. or 1⅛-in.

PUMP 1 (at Hydrant)				PUMP 2 (at Fire)				NOZZLE		
Inlet PSI	Disc. PSI	RPM	Pump Pos.	Inlet PSI	Disc. PSI	RPM	Pump Pos.	Tip	PSI	GPM
47	150	1400	Ser.	0	100	900	Ser.	1"	44	209
45	200	1700	Ser.	0	125	1100	Ser.	1"	56	221
45	225	1850	Ser.	0	140	1190	Ser.	1"	64	237
47	150	1400	Ser.	0	90	800	Ser.	1⅛"	27	195
46	200	1700	Ser.	0	105	1000	Ser.	1⅛"	38	231
46	225	1850	Ser.	0	120	1100	Ser.	1⅛"	45	254

Table V. Single Line Relay. Pumps 2000 Ft. Apart. Two 100-ft. Lines of 1½ In. to Rockwood All-purpose Nozzle with ⅜-in. Solid Streams

Pump 1 — 2000 ft. 2½ — Pump 2 — 100-ft. ⅜-in. / ⅜-in. 1½

PUMP 1 (at Hydrant)				PUMP 2 (at Fire)				NOZZLE		
Inlet PSI	Disc. PSI	RPM	Pump Pos.	Inlet PSI	Disc. PSI	RPM	Pump Pos.	Tip	PSI	GPM
35	200	–	Ser.	0	109	–	Ser.	⅜"	76	100
								⅜"	76	100



Hand Made Fire Engine Model

CHIEF C. H. Weiler of Robison Lake, Michigan, (see FIREMEN for October, 1951, and February, 1949), recently completed this working model of a fire engine for use in fire prevention demonstrations. The wheels and other wooden parts were whittled by hand and the completion of the engine required 80 hours of labor.

The model measures 14½ inches in length, without the draw pole, and 7 inches in width. Front wheels are 4¾ inches in diameter and the rear wheels measure 5½ inches in diameter. Height to the top of the smoke pipe is 10¼ inches.

The pump was made from an oil pump taken from a 1927 Chevrolet. It is driven by a small electric motor which runs at 1,000 rpm, and is capable of providing about 2 quarts of water per minute at 5 pounds pressure. The intake valve is a brass nozzle with a 1/16-in. tip. The water globe was made from an automobile headlight bulb and the smoke pipe was fashioned from the casing of a watch. Lanterns and the whistle were made from rifle shells while the globes for the lanterns were made from medicine pill containers. The complete model weighs 5 pounds.

"Rule One: Never use artificial respiration on victim unless she's unconscious."

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INDIAN FIRE PUMPS

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The Rhode Island Forest Service Fire Trucks are well equipped with INDIAN Fire Pumps. George W. Smith of Wakefield, writes:

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Delayed Alarm, Search for Water, Ruined Motel

Pictures and report submitted by Chief K. L. Evans, Reno Fire Department.

AN ALARM system and knowledge of a source of water supply might have helped to minimize this fire loss in the Westerner Motel, near Reno, Nevada, on November 17. When fire started in the furnace and spread rapidly through the building, the motel manager and his wife attempted to telephone an alarm. The telephone in the motel was already dead and when the manager's wife ran to an adjacent motel to the east nobody was on the premises. She then had to run to another motel 200 feet west of the involved building to send the alarm.

When apparatus arrived from the Reno County Fire Department the fire had spread rapidly and involved the nearest apartments. A call for assistance was made to the Sparks County Fire Department.

There was no fire resistive wall between the furnace room and adjacent rooms. Walls consisted of 2 by 4-in. studding and plaster board and the exterior portion of the building was of knotty pine with a combustible transparent finish.

Top left picture shows the extent of fire when fire fighters went into action. Engine No. 3, from Reno City, was called but no tank trucks were available immediately. The manager of the motel did not know where water was available and fire fighters spent some time before locating a pond 1,000 feet away from the building. Meanwhile booster lines were in operation.

The Reno County fire fighters pumped from the pond through a 2½-in. line wyed into two 1½-in. leader lines. The Sparks County Fire Department made a similar hose lay and a Reno City tanker arrived with additional water.

Pictures at center and right show fire fighters attempting to check fire in attic and roof. When control was finally established the furnace room and three adjacent apartments were destroyed and eight apartments and the veranda were badly damaged.

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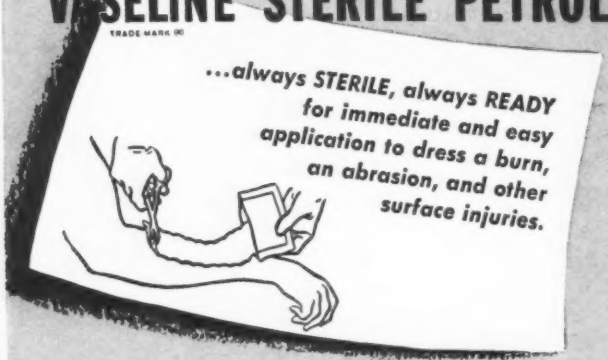
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have been adopted by surgeons as standard procedure, by nurses as preferred matériel, by professionally-trained aid personnel as the compact, ready-made, ready-to-apply dressing of their choice.

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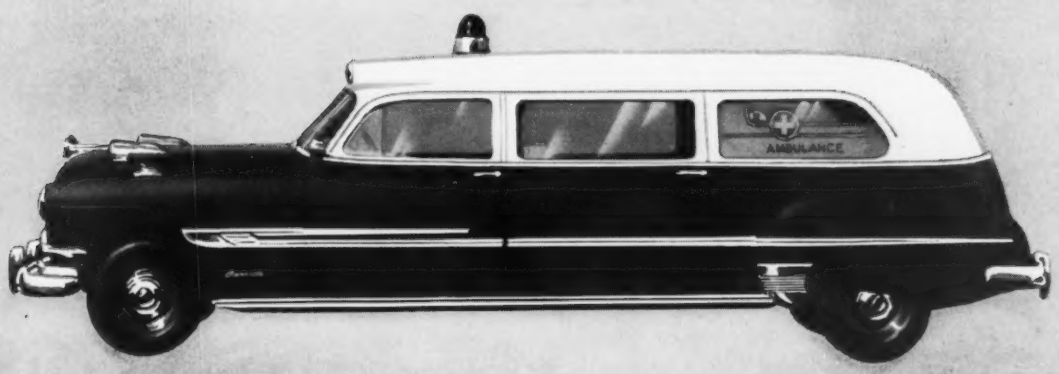

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NFPA Member Departments

Centre Township Volunteer Fire Department, South Bend, Indiana

THIS attractive fire station is a good example of what volunteer spirit and labor can accomplish in a community. Members of the Centre Township Volunteer Fire Department and other community members constructed this building with a labor cost of only $361 and a total cost of $12,950. The first floor houses a 750 gpm pumper, a 500 gpm pumper and a 1,000 gallon tank truck. The second floor has a meeting room, a kitchen, office and rest rooms.

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W. D. ALLEN Manufacturing Co.
CHICAGO 6 • NEW YORK 7
Established 1887

The fire department is headed by Chief Loren D. Olmstead and has 40 active fire fighters. Mrs. Clarence Wallis heads the Ladies Auxiliary of 32 members. The department was organized in October of 1948. The 750 gpm pumper was purchased in December of that year. Since the need for a fire station was apparent members of the department decided to raise funds through solicitation. Residents of the community pledged $13,000 in the first few months of 1949 and construction of the fire station was begun. Masonry work, painting, and other tasks were all performed through volunteer labor. When the department obtained a hose truck in 1949 it was converted to a 500 gpm pumper and painted by residents of the community without cost to the fire department or to the township. Recently the Ladies Auxiliary raised funds to purchase a resuscitator and presented it to the department.

One of the features of the fire station is a well with a jet pump and a 3-inch main which supplies an 8,000 gallon water storage tank on which pressure of 50 pounds is maintained at all times for refilling the tanks of fire apparatus.

Members of the department participate in activities of the St. Joseph County Fire Fighters Association and the Indiana Firemen's Association.

Warsaw Volunteer Fire Department, Warsaw, Indiana

CHIEF Wes Hay, Assistant Chief Earl Johnson, Captain W. G. Walgamuth, Sr., and Secretary N. W. Bennett head this department of 24 active members which protects 6 square miles in Warsaw and Wayne Townships. The department has two combination pumpers of 500 gpm capacity, a 750 gpm pumper, a 2,000-gallon tank truck and a 500 gpm OCD pumper mounted on a trailer. A jeep is used as an emergency rescue unit and is equipped with a first aid kit, a resuscitator and grappling hooks. The apparatus is shown above. Mayor Hodges of Warsaw and Chief Hay are standing beside the jeep in the foreground.

All members of the department participate in Red Cross First Aid training. Other training sessions are held twice each month. Members are paid $125 each per year with the exception of four drivers who are on full-time status. A Ladies Auxiliary of 32 members is headed by Mrs. Robert Hodges.

At present apparatus is housed in a 2-story wood frame fire station and a 1-story brick building. Plans call for the construction of a new building to house the fire station, police station, and city hall. Income is derived from taxes in the township which consists of a rural farm population of 15,000.

East Deer Township Volunteer Hose Company

THIS volunteer fire company protects the industrial town of Creighton, Pennsylvania, which has a population of 3,100. Presiding officers are Chief A. C. McLaughlin, Assistant Chief Jack McCaskey, President Alfred Robinson, and Secretary Al Holmes.

Since 1927 the company has fought or assisted in every major fire that occurred near Creighton. Another separately organized fire company in the community cooperates in the fire protection.

Apparatus consists of a 1941 Mack 750 gpm pumper, two 1948 Dodge squad cars with lighting equipment, and a 1947 Cadillac ambulance. The fire company has provided ambulance service to the community for 22 years. Members raised the funds for the purchase and maintenance of ambulance and the township provides the funds for fire fighting equipment. A Ladies Auxiliary of 50 members headed by Secretary Edna Zemla assists in the social activities.

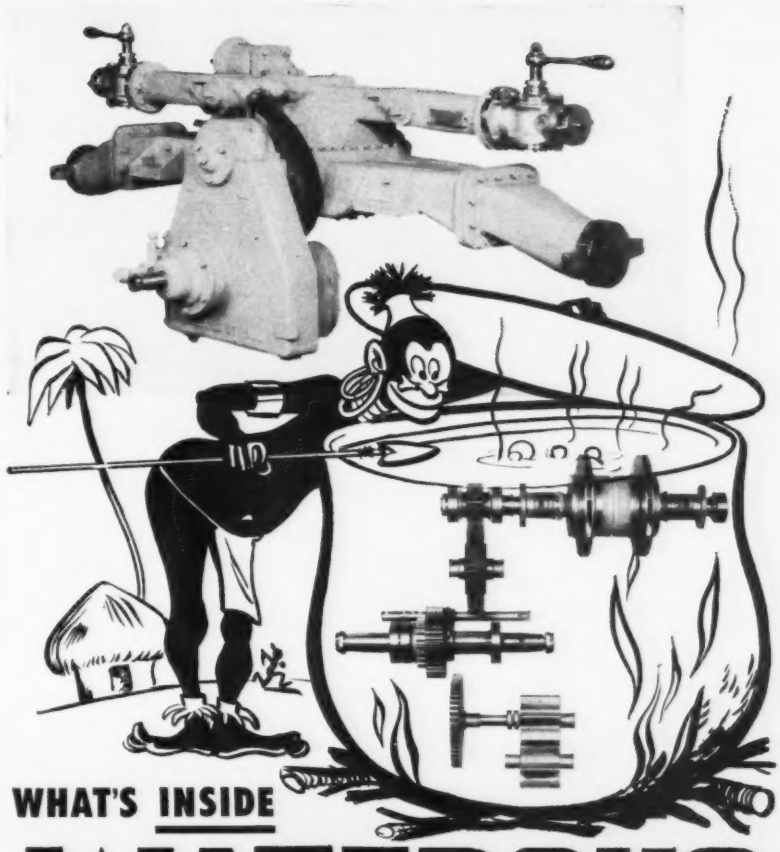
The fire company is active in the Alleghany Valley Firemen's Association and participates in a mutual aid program with surrounding fire departments.

Mount Airy Volunteer Fire Company

THIS fire company of Mount Airy, Maryland, protects an area of 1,200 population and serves the rural areas of 4 counties. Chief Herman S. Beck, Assistant Chief N. Rimbey, President C. Oscar Baker, and Secretary Weldon G. Dawson are the presiding officers. The fire company has a total membership of 375 including 50 active fire fighters.

Apparatus consists of a 1947 Mack 750 gpm pumper, a 1933 500 gpm Mack pumper, a 1926 American LaFrance pumper, and an International truck with a 350 gpm front mounted pump. The fire station is a 2-story concrete brick building with 2 engine rooms, a first aid room, 2 small meeting rooms, a large dining room and a kitchen.

Members of the fire company participate in the training programs conducted at the University of Maryland. Mrs. Jean King heads the Ladies Auxiliary consisting of 100 members.



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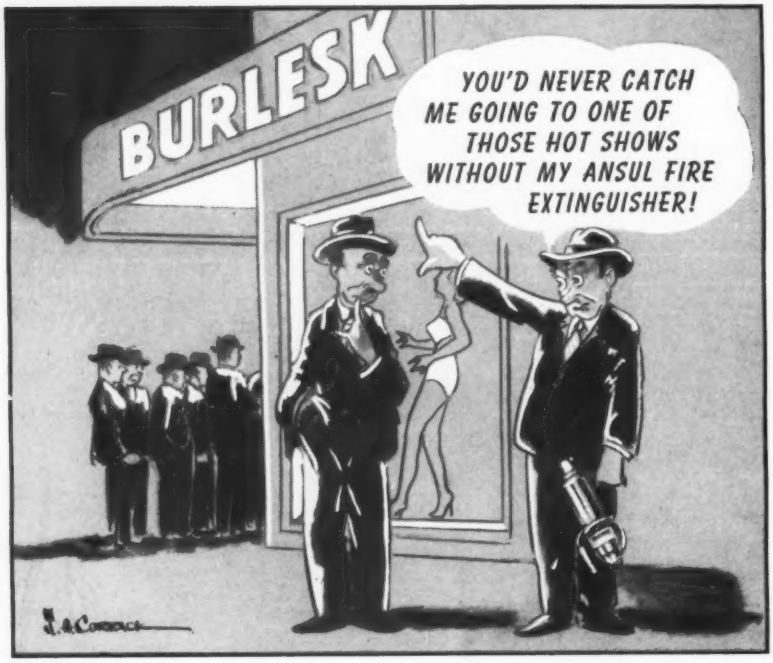

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Handling Common Contagious Diseases

(Continued from page 15)

cold weather disease. About twice as many cases are seen in the winter as in the summer months. Infants usually have an inherited immunity which lasts about ten months. Skin tests show that more than one-half of the children after the second six months of life become susceptible. They may be immunized if exposed. Not more than twenty-five per cent of adults are susceptible, although by the age of twenty years, far less have had the disease. This, apparently, is due to repeated exposure to the disease which has produced immunity without causing clinical infection. The incubation period is from one to seven days, usually four. Patients are most contagious during the first week when acute sore throat is prominent, and, often, into the second week. Scarlet fever is considered to be only moderately contagious. Hence, schoolroom exposures at the time of onset are not usually followed by secondary cases, quite contrary to early measles exposure. This also applies to ambulance exposures even specific precautions.

Isolation and quarantine for scarlet fever and other infectious diseases varies in each community. Check with your local Health Department for these periods. The average quarantine of scarlet fever patients is about three weeks. Desquamation, or peeling, used to be considered significant and patients were not released from quarantine until this had ceased. This is no longer held to be of significance and it has been frequently demonstrated that scaling skin cannot transmit infection. For three weeks after their release from isolation from scarlet fever, children should not sleep in the same bed with others who have not had the disease and, during this period, the articles they use at meals should be kept separate. Those who have had a discharge from nose or ears should not return to school or business until after the end of their strict isolation period. The quarantine regulations of most communities as yet fail to recognize the possibility of identifying carriers of the disease. Hence, too rigid or prolonged quarantine of infected individuals is useless.

Those who remain in the same household with a case of scarlet fever, and this particularly applies to children, should not return to school during the existence of the case. Children who have not had the disease but who have been exposed at home or at school should not return to school until seven days after the last exposure. Ambulance linens which contact the patient during the acute infectious stage of the disease should be isolated and boiled before their regular laundering. Objects of metal or mineral which will not be harmed should be boiled, and the inside of the ambulance should be scrubbed with strong soap and water, or with Lysol solution.

Measles

MEASLES may be defined as a widely prevalent, highly communicable disease characterized by fever, cough, nose inflammation, conjunctivitis, a typical eruption of the skin, the appearance of "Koplik spots" within the mouth, and a marked tendency toward secondary infection. It is caused by a filterable virus present during the catarrhal stage, in the secretions from the respiratory tract and eyes. It is also present in the blood. Infection occurs by direct contact with the patient during the stage of invasion, by droplet infection, through contact with articles very freshly soiled by secretions from the nose and throat, or by a third person coming directly from the patient, as in a hospital ward. Measles is easily carried from bed to bed in a hospital or even from room to room in a building, but, owing to the short period of life of the virus away from the patient, it is almost impossible for a third person to carry measles infection through fresh air from one building to another. Most adults are immune by the age of twenty-one. Isolation in measles varies, according to local regulations. In most areas it ends five days after the appearance of the eruption if there are no complications. Children exposed should be kept out of school and under observation for fourteen days from the last exposure. Children exposed in school may be allowed to attend school for the next seven days. They should then be

(*Please turn to page 30*)

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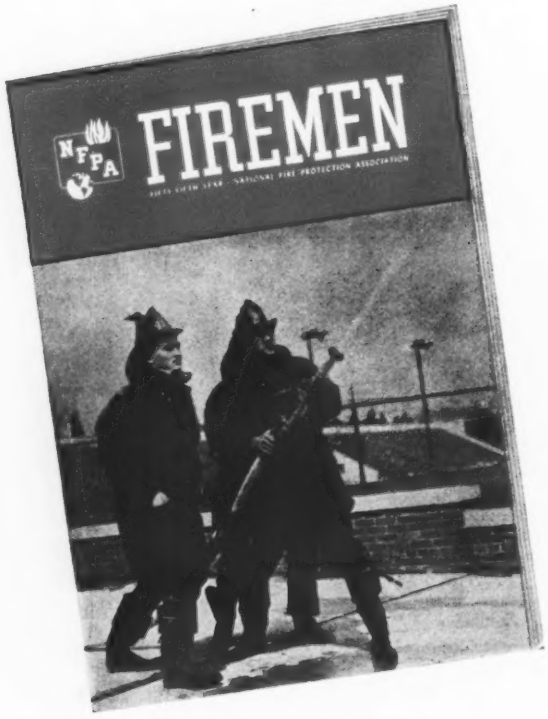
This is a good time to take stock for the coming year and to make certain that your department is receiving the full benefits of its membership in the NFPA. Here is an outline of what NFPA Fire Department Membership can bring to you and your department during the coming year:



As a member of the uniformed fire service, your membership will cost $12.50 per year and will include subscriptions to FIREMEN, to the monthly *Fire News*, to the NFPA *Quarterly*, and also a number of important publications which are made available to members from time to time. You will also receive a handsome membership certificate, suitable for framing.

If your fire department enrolls as a unit, or if you are a fire chief, then SIX (6) subscriptions of FIREMEN will be included in the membership, together with the above publications, for the same $12.50. If you desire to have more than six subscriptions sent to your department, then additional subscriptions will cost $1.25 each.

NFPA Fire Department Membership is available to individuals in the uniformed fire service, to any paid, call, or volunteer fire department, and to industrial fire brigades. The "six-copy" plan of membership is available only to chiefs of fire departments and fire departments as unit members.

Other members of NFPA may secure subscriptions to FIREMEN for $1.25 per year in addition to regular membership dues. Any additional subscriptions to FIREMEN also cost $1.25 per year.

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CLIP ALONG THIS LINE AND MAIL TO ADDRESS BELOW

F-2-53

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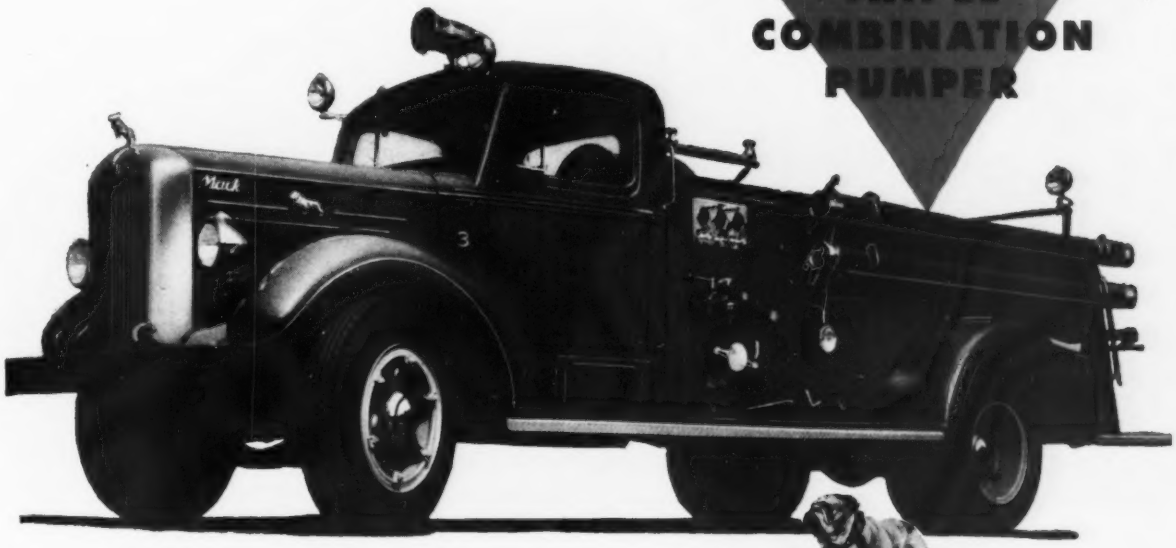

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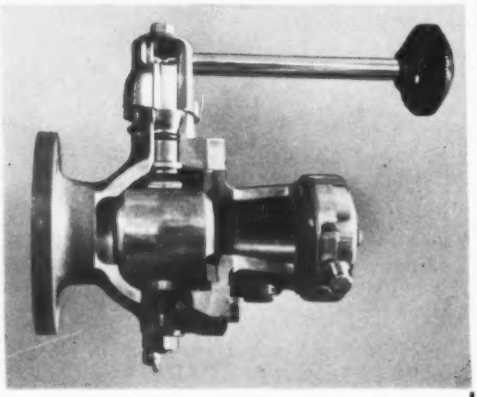
The Hale Type BL Discharge Valve is typical of constant Hale improvements resulting from constant research.

For detailed information send for Bulletin No. 293 on the Hale BL Discharge Valve.



OUTSTANDING FEATURES

- Turns easily at all pressures.
- Will not leak at pressure or vacuum.
- Circular section through valve cuts flow loss.
- Not sensitive to dirty water.
- Easily serviced . . . no "grinding in."
- Slight twist of handle locks valve into any desired position for gating.

HALE **FIRE PUMP COMPANY**

CONSHOHOCKEN, PA.

Hale Fire Pumps Are Built In All Standard Capacities

Handling Common Contagious Diseases

(*Continued from page 27*)

isolated until the fourteenth day after exposure. Adults are usually immune even if they have not had the disease, due to repeated subclinical exposures.

The infection may be carried by cough droplets at least five feet. Hence, everything within six feet of the patient's head should be considered contaminated whether or not the patient has touched it. As the measles virus dies quickly in fresh air, and, as it is nearly impossible to carry the disease through the open air for any appreciable distance, simply airing the inside of the ambulance for a short period is sufficient. Linen should be aired and laundered but need not be boiled.

Rubella (German Measles)

THIS is an acute, contagious disease characterized by slight constitutional symptoms, swelling and tenderness of the lymph glands behind the ear, and by an eruption suggesting measles, but lighter, which disappears within three days. Always a very mild disease, and unaccompanied by complications of any consequence, it may be overlooked. Its principal danger is that, should it infect pregnant women, particularly in the second or third month, it may result in the birth of an imperfectly formed baby. So strong is this tendency to produce abnormalities in unborn children that some physicians consider it an indication to terminate pregnancy if their patients contract the disease. The incubation period is from five to twenty-one days. The filterable virus which causes the disease is probably transmitted by direct droplet infection. Washing of the hands and face after contact, airing and laundering of ambulance linen, and a thorough airing of the ambulance compartment is all that is indicated.

(The continuation of this article will appear in a forthcoming issue of FIREMEN *and will cover whooping cough, chicken pox, small pox, mumps, poliomyelitis, and other diseases, in addition to mentioning general suggestions for procedures to be followed during transportation and handling of infected patients.* — Ed.)

Why Not "Poll" Your Fire Fighters?

RECENTLY a "rookie" fire fighter of a municipal fire department was given a complimentary copy of FIREMEN by a member of the NFPA Staff. The recipient expressed his thanks then remarked "Gee, we never get a chance to see this magazine. Only the big shots get it in our department."

It is hoped that such a situation exists in very few fire departments. Generally, promotional literature explaining NFPA Fire Department membership is directed to the chiefs of fire departments. Unfortunately some fire chiefs overlook the fact that many of their fire fighters might be interested in and would benefit by NFPA publications.

If a fire chief or fire department has NFPA membership, six (6) copies of FIREMEN are included with the membership. If more than six (6) subscriptions are desired then extra subscriptions may be obtained for only $1.25 each, at the time of membership renewal.

Why not take a "poll" of all the fire fighters and determine if enough subscriptions to FIREMEN are being made available?

NFPA Welcomes:

THE following fire chiefs and fire departments who have enrolled as members of the National Fire Protection Association.

Alabama: Chief C. W. Schlosser, Attalla Fire Department, Attalla.

California: Anza Fire Department, Arlington.

Connecticut: Tunxis Hose Company No. 1, Unionville.

Illinois: Ottawa Fire Department, Ottawa.

Manitoba: The Winkler Volunteer Fire Brigade, Winkler.

Massachusetts: Hinsdale Volunteer Fire Department, Hinsdale.

New Jersey: Community Volunteer Fire Company No. 1, Woodbury.

Ohio: Kidron Volunteer Fire Department, Kidron.

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Pennsylvania: East Deer Township Volunteer Hose Company, Creighton.

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Virginia: Chief H. S. Hart, Portsmouth.

West Virginia: Ripley Volunteer Fire Department, Ripley.

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Dates to Remember

Arkansas: The Arkansas State Fire School is scheduled to be held at Little Rock, March 16–18.

Pennsylvania: The 1952 Philadelphia Safety Conference will be held in the Bellview Stratford Hotel in Philadelphia, March 4 and 5.

The Spring meeting of the Keystone State Fire Chiefs Association will be held at Montoursville on May 16. The Loyalsock Fire Company and the Willing Hand Hose Company will be hosts.

Tennessee: The 1953 Fire Department Instructors' Conference will be held in Memphis, Tennessee, February 24–27.

Correction Notice

THE November, 1952, issue of FIREMEN contained, on pages 8–13, a report of state and provincial firemen's training for the fiscal year ending June 30, 1952. In this report the figures for the State of Pennsylvania were incorrectly stated as 3,180. Actually 6,529 fire fighters registered for training during the period covered by the report. The 14th Annual Pennsylvania Fire School held in August, 1952, had a total attendance of 1,006.

This correction changes the reported total of training in the U. S. and Canada. The corrected figures for total U. S. firemen's training are 86,671 and the grand total of training for the U. S. and Canada amounts to 93,002.

The Ohio State Fire School held at Ohio State University in September, 1952, had a total enrollment of 118. This figure was not included in the annual summary since the school was not held during the fiscal year ending June 30.

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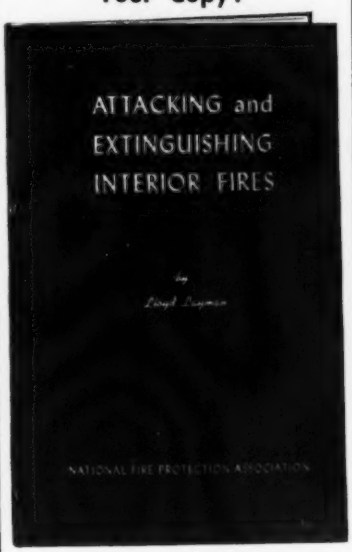

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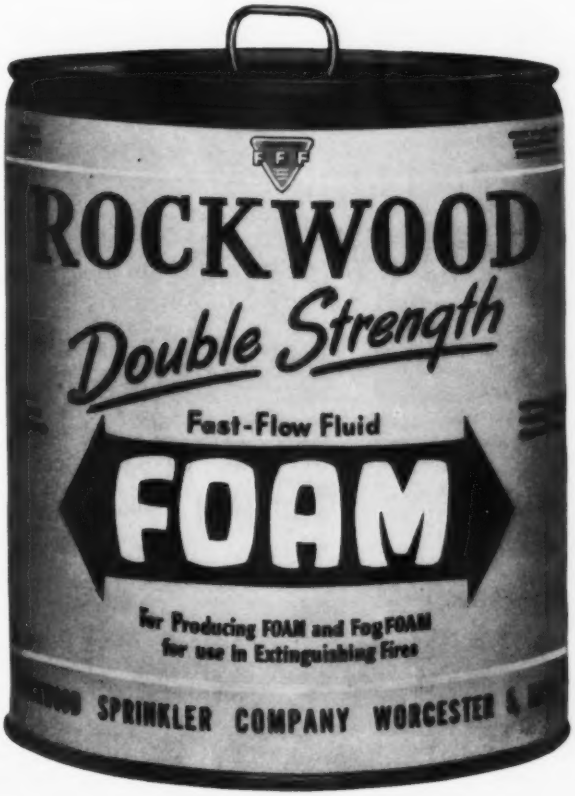

Rockwood's new Double Strength FOAM Liquid will put out fires in flammable liquids faster and at lower cost. Three parts of FOAM liquid mixed with 97 parts of water form an excellent foam blanket that will quickly re-seal if broken. Double Strength FOAM Liquid is more fluid, faster spreading and flows freely at sub-zero temperatures (−15° F.) It is quicker to put into action, covers burning surfaces faster, seals off combustible vapors completely and flows freely around obstructions. This foam blanket has proved its ability to extinguish large spill fires in gasoline with maximum speed and safety to firemen.

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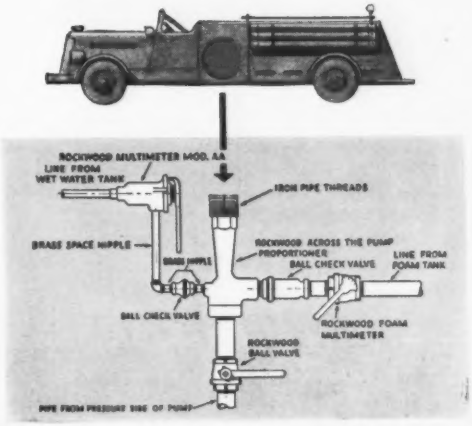

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What's New in Fire Equipment?

Portable Hydraulic Cutter for Fire Departments

Burglar bars, chain, reinforcing rods, and other such obstacles encountered by fire departments and rescue squads may be quickly cut by a new portable hydraulic cutter manufactured by the Manco Manufacturing Company, Bradley, Illinois. The unit, called Model 200-A, is less than 24 inches in length and weighs only 15 pounds. Although designed for ½-inch capacity the unit has cut ⅝-inch burglar bars at a demonstration. According to the manufacturer, blades can be removed easily for resharpening or replacement. A safety valve allows hydraulic fluid to bypass when maximum operating thrust is exceeded. Information may be obtained from the manufacturer at the above address.

●

New Bulletin Describes Front-Mounted Pump

American-Marsh Pumps, Inc., Battle Creek, Michigan, has issued a new bulletin describing the company's Model UA front-mounted, gear driven, centrifugal fire pump. Illustrations and diagrams explain the pumps construction and operations. Write to the manufacturer at the above address and ask for Bulletin 8330-AC.

●

Hand-Sized Transmitter

The Communications and Electronics Division of Motorola, 4545 W. Augusta Blvd., Chicago 51, Illinois, has announced production of a hand-sized Handie Micro-

Talkie Transmitter designed to operate in the 152–174 mc. frequency band. The compact unit, weighing only one pound, thirteen ounces, has a power output of 20 to 40 milliwatts and a tested optimum range up to five miles, according to the manufacturer. The complete transmitter, including self-contained dry batteries and microphone, is only 7⅜ by 2½ by 1¾ inches in size. A rigid, chrome plated loop antenna doubles as the carrying handle. The transmitter uses eight subminiature tube stages with "printed" associated circuitry and is designed for use by fire fighters, police, and industrial personnel. Write to the manufacturer at the above address for further information.

●

IPCO "Scotchlite" Traffic Cape

A cape designed to give added protection to fire fighters, police, and others who direct traffic has been produced by the Industrial Products Company, Philadelphia 33, Pennsylvania. It is manufactured of close woven white canvas with silver "Scotchlite" reflective strips on both front and back of the cape. It may be worn closed as shown in picture above or with the bottom corners snapped to the back to allow cape to move with arms, and is constructed to fit any size man, with or without coat. Write to the manufacturer at the above address for further information.

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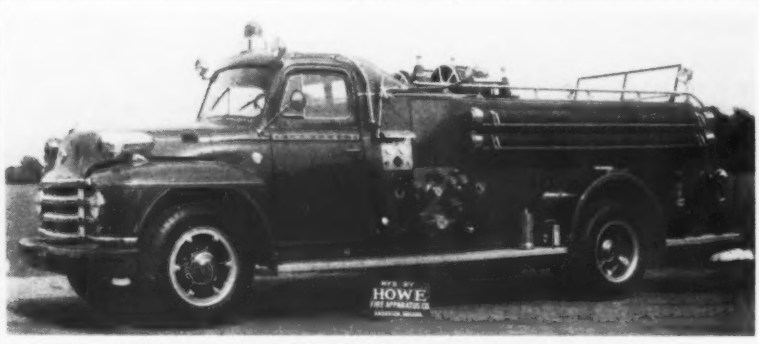

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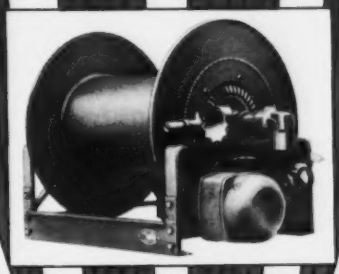

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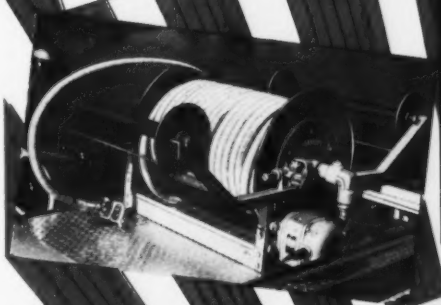

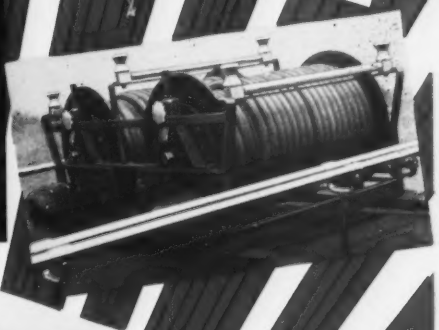

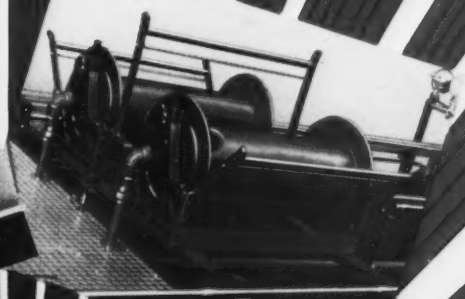

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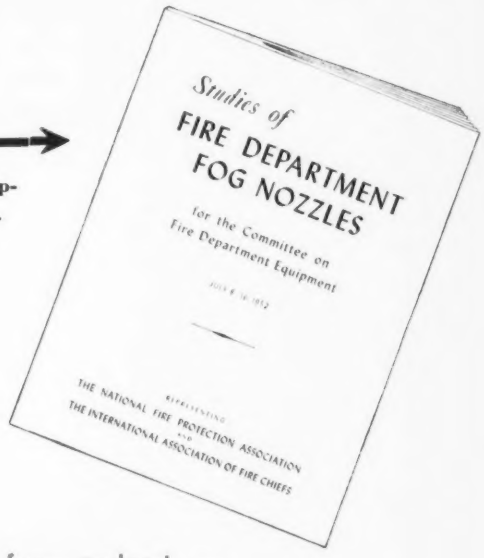

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